

## Abstracts

A109

sion and logistic regression models were used to evaluate the effect of pharmacist intervention on patients' A1c levels after controlling for gender, baseline age, baseline A1c values, ethnicity, smoking status, insurance, and the duration between the index date and last visit. **RESULTS:** A total of 484 patients were included in the analysis: 222 who received pharmacist intervention, and 262 receiving usual care. The change in A1c between baseline and last visit was  $-1.7$  percentage points in the intervention group,  $-1.1$  percentage points with usual care. The estimated impact of the pharmacists' interventions was  $-1.38$  percentage points ( $p < 0.0001$ ) after adjusting for differences in patient characteristics using ordinary least squares regression techniques. Similarly, the pharmacist intervention increased the likelihood of achieving the treatment goal of an A1c  $< 7\%$  by four-fold ( $OR = 4.037$ ,  $p < 0.0001$ ). **CONCLUSIONS:** Pharmacist interventions do have significant benefit for patients with diabetes. The results demonstrate the importance of the pharmacist in diabetes control and can be applied to similar clinics serving mostly uninsured Hispanic patients.

PDB63

#### THE IMPACT OF A PPO PAY-FOR-PERFORMANCE PROGRAM ON DIABETIC PATIENTS

Chen JY<sup>1</sup>, Tian H<sup>1</sup>, Hodges K<sup>2</sup>, Juarez D<sup>3</sup>, Chung R<sup>4</sup>

<sup>1</sup>Health Benchmarks, Inc., Woodland Hills, CA, USA, <sup>2</sup>Hawaii Medical Service Association, Honolulu, HI, USA, <sup>3</sup>Hawaii Medical Service Association, Honolulu, HI, USA, <sup>4</sup>HMSA, Honolulu, HI, USA

**OBJECTIVES:** To investigate the effectiveness of a pay-for-performance program (P4P) to increase quality care processes and decrease hospitalization among diabetics. **METHODS:** The study sample consisted of diabetic members 18 to 75 years of age enrolled in a Preferred Provider Organization (PPO) from 1999 to 2006, as identified by the administrative claims data. We used multivariate analyses to assess the impact of seeing P4P-participating providers on the receipt of quality of care (i.e., at least two hemoglobin A1c (HbA1c) and one low-density-lipoprotein (LDL) tests) and hospitalizations while controlling the following characteristics: age, gender, comorbidity, number of outpatient visits, number of distinct primary care physicians seen, seen by an endocrinologist, insulin dependence, and calendar year. **RESULTS:** Diabetics who saw P4P-participating providers were significantly more likely to receive quality care when compared to diabetics who did not ( $OR\ 1.16$ ,  $95\%CI\ 1.11-1.22$ ,  $p < 0.001$ ). Diabetics who received quality care were significantly less likely to be hospitalized in the following year when compared to diabetics who did not ( $IRR\ 0.80$ ,  $95\%CI\ 0.80-0.85$ ,  $p < 0.001$ ). Although in a one-year period, there was no difference in hospitalization rates between diabetics who saw P4P-participating providers and those who did not, diabetics who saw P4P-participating providers in 2004 through 2006 (i.e., three-consecutive years) were significantly less likely to be hospitalized in 2006 when compared to those who did not ( $IRR\ 0.75$ ,  $95\%CI\ 0.61-0.93$ ,  $p < 0.01$ ). **CONCLUSIONS:** We found that among diabetics in a PPO setting, a P4P can significantly increase quality care processes and decrease hospitalization rates. Further research should focus on defining the impact of P4P on intermediary outcomes such as HbA1c and LDL levels.

PDB64

#### A REVIEW OF RETROSPECTIVE, CONTINUOUS GLUCOSE MONITORING: AN EXAMPLE OF A MEDICAL DEVICE WHERE THE TYPICAL PRIMARY OUTCOME MEASURE MAY BE INAPPROPRIATE?

Currie CJ<sup>1</sup>, Poole CD<sup>2</sup>, Papo NL<sup>3</sup>

<sup>1</sup>Cardiff University, Cardiff, UK, <sup>2</sup>Pharmatelligence, Cardiff, South Glamorgan, UK, <sup>3</sup>Medtronic International, Tolochenaz, Switzerland

**OBJECTIVES:** Normoglycaemia in people with diabetes results in improved outcome. Continuous glucose monitoring provides detailed diagnostic information used to optimise therapy. The objective of this study was to review randomised controlled trials (RCTs) of the only device available for blinded, professional use. **METHODS:** Published studies using the MiniMed Continuous Glucose Monitoring System (CGMS, Medtronic Inc., Northridge, CA) were identified using appropriate search terms in a series of clinical databases including: Medline, Pubmed, Google Scholar and Scientific Web of Knowledge. Other measures were also taken such as searching the reference lists and review by recognised experts. **RESULTS:** Seven randomised controlled trials were identified, five in children. Double-blinding was not possible. Although HbA1c was explicitly stated as the primary endpoint in four studies the studies were only adequately powered to detect large, between-group minimum differences (range  $0.5$  to  $1.0\%$  HbA1c). Only two studies included subjects with type-2 diabetes. Other endpoints included the frequency of hypoglycaemia and hyperglycaemia events. Within-group HbA1c decreases were observed in all but one study. The crude, weighted mean improvement in HbA1c across the studies using the device was  $0.6\%$  (range  $0\%$  to  $0.8\%$ ). No studies recorded how the information was utilised to modify treatment, such as changes in dose titration or treatment regimen. **CONCLUSIONS:** Devices such as the professional CGMS provide detailed diagnostic information. However, any consequent changes in care and outcome can only result from the appropriate application of this information. Although there was a notable improvement in glucose control (HbA1c), existing studies were largely underpowered and did not capture the resulting treatment changes that could lead to improved outcome.

PDB65

#### ASSOCIATIONS BETWEEN PATIENT-REPORTED DIABETES KNOWLEDGE AND HEALTH OUTCOMES, SELF-CARE, AND PREFERENCES FOR POTENTIALLY-BENEFICIAL NEW TREATMENT OPTIONS

Bruhn D<sup>1</sup>, Polonsky WH<sup>2</sup>, Hawkins S<sup>3</sup>, Spollett G<sup>4</sup>, Joy S<sup>5</sup>, Uplinger N<sup>6</sup>, Sesetyan T<sup>3</sup>, Best JH<sup>7</sup>

<sup>1</sup>Eli Lilly and Company, Indianapolis, IN, USA, <sup>2</sup>Behavioral Diabetes Institute, San Diego, CA, USA, <sup>3</sup>Harris Interactive, Claremont, CA, USA, <sup>4</sup>Albert Einstein Healthcare Network, New Haven, CT, USA, <sup>5</sup>Duke University Medical Center, Durham, NC, USA, <sup>6</sup>Albert Einstein Healthcare Network, Philadelphia, PA, USA, <sup>7</sup>Amylin Pharmaceuticals, Inc., San Diego, CA, USA

**OBJECTIVES:** Examine the impact of patient self-reported diabetes knowledge on diabetes self management and outcomes and assess whether diabetes knowledge influences patient preferences for a once weekly (QW) injectable therapy versus daily oral medications. **METHODS:** A nationally representative random sample of patients with self-reported type-2 diabetes ( $n = 1516$ ) participated in an on-line survey. Regression analyses were used to explore the relationship between self-reported diabetes knowledge, health outcomes, and preferences for QW therapy. **RESULTS:** Mean age of the sample was 57.5 years, 52% were men, and mean duration of diabetes was 9.7 years. Self-rated knowledge of diabetes ranged from "extremely knowledgeable" (9% of patients) to "very knowledgeable" (31%), "knowledgeable" (38%), "somewhat knowledgeable" (21%) and "not knowledgeable" (1%). Adjusted for demographic factors (age, gender, diabetes duration, education level), higher level of knowledge was associated with self-reported improvement in health since diagnosis, both physical ( $\beta = 0.15$ ) and emotional ( $\beta = 0.18$ ), and better self-care adherence, including dietary ( $\beta = 0.14$ ), exercise ( $\beta = 0.11$ ), medication ( $\beta = 0.12$ ) and blood glucose monitoring recommendations ( $\beta = 0.18$ ) ( $p < 0.001$  for all included variables). When asked to consider potential advantages of a QW injectable medication if superior blood glucose control and similar safety could be achieved as compared to a daily oral medication, preference for a QW approach was positively associated with diabetes knowledge ( $OR\ 1.18$ ,  $p < 0.03$ ), after adjustment for demographics and past and present experience with self-injected medications (43%). Assuming same blood glucose control and safety, overall, 54% of patients stated a preference for once weekly versus daily injectable diabetes medication. **CONCLUSIONS:** Higher levels of self-reported diabetes knowledge are associated with greater improvement in self-reported health, as well as adherence to diabetes self-care behaviors. Patients who report higher levels of diabetes knowledge may be more willing to consider new treatment options, such as a once weekly injectable therapy for diabetes.

#### INFECTION – Clinical Outcomes Studies

PIN1

##### STATISTICAL ANALYSIS OF MONONUCLEOSIS IN ADOLESCENTS

LaRue CL

University of Louisville, Louisville, KY, USA

**OBJECTIVES:** Mononucleosis is a non-fatal disease that is most widely seen in the adolescent ages of teenagers and toddlers. Mono is caused by the Epstein-Barr virus; a member of the herpes virus family and one of the most common human viruses, affecting as many as 95% of adults between 35 and 40 years of age. When infection with EBV occurs during adolescence or young adulthood, it causes mononucleosis 35% to 50% of the time. Our objective is to use data from the National Inpatient Sample for 2005, conducted by the Agency for Healthcare Research and Quality to explain these and other correlations with respect to mononucleosis. **METHODS:** Within the sample, there were 2000 observations of patients with mono and 1814 without mono. The SAS statistical analysis software was used to produce table, graphical, and regression analysis to explain data correlations and discrepancies among the diseased population and the non-diseased population or the control group. **RESULTS:** Demographic variables of gender and race were normally distributed within the disease group. Procedures of injection of antibiotic, venous catheterization, biopsy of bone marrow, tonsillectomy with adenoidectomy, along with diagnosis of disorder of fluid, acute tonsillitis, acute pharyngitis, general symptoms, peritonsillar abscess, and other symptoms involving abdomen and pelvis were seen as predictive variables correlated with having the disease. Because a wide array of procedures were seen in the disease population, the most common procedure classifications were extracted and used to perform regression analysis. **CONCLUSIONS:** Procedure classes of other operations on lung and bronchus, incision, excision, and anastomosis of intestine, along with incision, excision, and occlusion of vessels, and operations on bone marrow and spleen were found to be the best indicators of predicting length of stay and total charges of the diseased group.

PIN2

##### FACTORS INFLUENCING PEDIATRIC PATIENTS WITH PNEUMONIA

Fleenor AL

University of Louisville, Louisville, KY, USA

**OBJECTIVES:** Pneumonia is a bacterial or viral infection that affects the lungs, and makes it difficult to breath. This disease can cause hospitalization and sometimes death. It is the purpose of this study to examine a group of pediatric patients with pneumonia and factors such as sex, length of stay, Charlson Index, age and hospital expenses to determine how they are related to the disease. **METHODS:** Data were